

1. A non-pneumatic tire comprising:
 - a toroidal-shaped tube having inner and outer circumferential surfaces interconnected by opposite side surfaces to collectively form a hollow chamber therebetween, said tube comprising at least two openings
 - 5 independently located proximate the inner circumferential surface; and
 - a solid fill composition disposed in the hollow chamber of the tube.

2. The tire of claim 1 wherein the fill composition comprises a foam material.
3. The tire of claim 1 wherein the fill composition comprises a polyurethane.
4. The tire of claim 1 wherein the fill composition has a surface Durometer hardness of greater than about 60 as measured by Shore A.
5. The tire of claim 1 wherein the fill composition has a surface Durometer hardness in the range from about 68 to about 75 as measured by Shore A.
6. The tire of claim 1 wherein the tube is formed of an elastomeric material.
7. The tire of claim 6 wherein the tube is formed of rubber.
8. The tire of claim 7 wherein the rubber is free of reinforcing agents.
9. The tire of claim 1 wherein the tube has a number of openings ranging from 4 to 12 at spaced locations along the inner circumferential surface.

10. The tire of claim 1 wherein the tube has 8 openings spaced along the inner circumferential surface.
11. The tire of claim 1 wherein the tube comprises a plurality of layers with the outermost layer defining the inner and outer circumferential surfaces and opposite side surfaces of the tube and the innermost layer defining the hollow chamber.
12. The tire of claim 1 wherein the tube further comprises a raised area on the outer circumferential surface of the tube forming a tread pattern along the outer circumferential surface.
13. A wheel comprising a rim and the tire of claim 1 mounted on the rim.
14. A low speed vehicle comprising the wheel of claim 13.

15. A non-pneumatic tire comprising:
- a toroidal-shaped tube having inner and outer circumferential surfaces interconnected by opposite side surfaces to collectively form a hollow chamber therebetween, said tube comprising a number of
- 5 independent openings ranging from 4 to 12 with each opening spaced at locations proximate the inner circumferential surface; and
- a solid fill composition disposed in the hollow chamber of the tube, the composition having a surface Durometer hardness of greater than about 60, as measured by Shore A.

16. The tire of claim 15 wherein the fill composition has a surface Durometer hardness in the range from about 68 to about 75, as measured by Shore A.
17. The tire of claim 15 wherein the fill composition comprises a polyurethane-based foam.
18. The tire of claim 15 wherein the tube has approximately 8 rectangular openings, each opening having a width ranging from about 0.2 inches to about 0.8 inches and a length ranging from about 0.5 inches to about 1 inch, the approximately 8 openings being substantially equidistantly spaced along the interior circumferential surface.
19. The tire of claim 15 wherein the tube further comprises a raised area on the outer circumferential surface of the tube forming a tread pattern along said outer circumferential surface.
20. The tire of claim 15 wherein the tube has an outer diameter ranging from about 8 inches to about 20 inches, an inner diameter ranging from about 2 inches to about 16 inches, an outer circumferential surface having a width ranging from about 2 inches to about 6 inches, and a tire height measured radially between the outer and inner circumferential surfaces ranging from about 2 inches to about 6 inches.

21. The tire of claim 15 wherein the tube has a Durometer hardness of greater than about 50, as measured by Shore A.
22. A wheel comprising a rim and the tire of claim 15 mounted on said rim.
23. A low speed vehicle comprising the wheel of claim 22.
24. The vehicle of claim 23 selected from the group consisting of a golf cart, a wheel barrow, a hand cart, a construction cart, a lawnmower, a wheel chair, a material cart, and a farm machine.

25. A non-pneumatic tire comprising:

a toroidal-shaped rubber tube having inner and outer circumferential surfaces interconnected by opposite side surfaces to collectively form a hollow chamber therebetween, said tube comprising approximately 8 rectangular openings, each opening having a width ranging from about 0.3 inches to about 0.5 inches and a length ranging from about 0.6 inches to about 0.8 inches, the approximately 8 openings being substantially equidistantly spaced along the interior circumferential surface; an outer diameter ranging from about 8 inches to about 20 inches, an inner diameter ranging from about 2 inches to about 16 inches; an outer circumferential surface having a width ranging from about 2 inches to about 6 inches; and a height measured radially between the outer and inner circumferential surfaces ranging from about 2 inches to about 6 inches; and

a solid polyurethane foam fill composition disposed in the hollow chamber of the tube, said composition having a surface Durometer hardness in the range from about 68 to about 75, as measured by Shore A.

26. The tire of claim 25 wherein the tube has a Durometer hardness of greater than about 50, as measured by Shore A.

27. A wheel comprising a rim and the tire of claim 25 mounted on said rim.

28. A low speed vehicle selected from the group consisting of a golf cart, a wheel barrow, a hand cart, a construction cart, a lawnmower, a wheel chair, a material cart, and a farm machine, the vehicle comprising the wheel of claim 27.

29. A method of making a non-pneumatic tire, the method comprising:
- extruding a toroidal-shaped tube having inner and outer circumferential surfaces interconnected by opposite side surfaces to collectively form a hollow chamber therebetween;
 - 5 cutting at least two openings in the extruded tube at spaced locations proximate the inner circumferential surface; and
 - filling the hollow chamber of the tube with a fill composition through the at least two cut openings to make a non-pneumatic tire.

30. The method of claim 29 further comprising curing the fill composition in the hollow chamber of the tube to form a hardened core therein.
31. The method of claim 30 wherein curing comprises exposing the fill composition to at least one of heat and pressure.
32. The method of claim 29 wherein filling the hollow chamber of the tube comprises centrifugally dispersing the fill composition into the hollow chamber of the tube.
33. The method of claim 29 wherein filling the hollow chamber of the tube comprises injecting the fill composition into the hollow chamber of the tube.
34. The method of claim 33 wherein the fill composition is injected into the hollow chamber of the tube while the tube is rotating at about 500 rpm.
35. The method of claim 29 further comprising mounting the tire onto a rim.

36. A method of making a non-pneumatic tire, the method comprising:
- extruding a rubber material into a toroidal-shaped tube having an outer diameter ranging from about 8 inches to about 20 inches, an outer circumferential surface with a width ranging from about 2 inches to about 6 inches, an inner diameter ranging from about 2 inches to about 16 inches, an inner circumferential surface, and a hollow chamber between the inner and outer circumferential surfaces and having a height ranging from about 2 inches to about 6 inches;
- cutting 8 independent rectangular openings at substantially equidistant locations along the interior circumferential surface of the tube, each opening having a width ranging from about 0.3 inches to about 0.5 inches and a length ranging from about 0.6 inches to about 0.8 inches;
- injecting a liquid fill composition into the hollow chamber of the tube through one or more of the cut openings; and
- curing the fill composition to form a solid core filling the hollow chamber of the tube, the core having a surface Durometer hardness in the range from about 68 to about 75, as measured by Shore A.

37. The method of claim 36 wherein filling the hollow chamber of the tube comprises centrifugally dispersing the fill composition into the hollow chamber of the tube.

38. The method of claim 37 wherein the fill composition is injected into the hollow chamber of the tube while the tube is rotating at about 500 rpm.

39. The method of claim 37 further comprising mounting the tire onto a rim.